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Teachers' Attitudes toward the Usage of Mobile Devices in EFL Classroom

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Abstract: Nowadays, technology is developing in a geometrically progressive manner. Its usage in different social areas is an imperative, rather than a choice. As expected, digital devices are applicable in the educational context, as well. Hence, the scope of the present study is to examine attitudes toward mobile learning among English teachers. For this purpose, we conducted a survey with 159 teachers from both state and private schools as well as universities in Turkey. In general, our results showed that teachers have positive attitudes toward the usage of mobile devices in the ESL learning context. However, there is an almost equal number of teachers who use and who do not use mobile devices and other digital contents in their classrooms. In addition, and according to teachers, there were two main obstacles to using mobile devices in teaching processes – lack of training and students' attitudes. On the other hand, the lowest ranked obstacles were school administrations and pedagogical justification.

Keywords: *English as a foreign language (EFL), English as a second language (ESL), mobile learning, teachers' attitudes, digital learning contents*

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Introduction

In postmodern society, we can make a distinction between digital and analog generations. Usually, digital (mostly younger) generations are eager to use their mobile devices and computers for different purposes. They have very positive attitudes toward electronic devices, contents, and activities on the Internet (Huang, Lin, & Chuang, 2007). In fact, their lives and professional habits are closely linked to devices (Goggin, 2006). Contrarily, the older generations are more used to using paper and pen, for personal and business purposes. This is a sort of digital generation gap.

Literature review

Because learning processes should be in accordance with learners' needs and habits, contemporary teachers have to adjust their lessons to students' preferences and attitudes as well as their way of learning. In other words, teachers should be digitally sensitive and trained to adequately fulfill learners' educational needs. Herrington, Herrington, Mantei, Olney, and Ferry (2009) underlined that new technologies lead to new pedagogies that are not teacher-centered. Kukulska-Hulme (2009) claims that the usage of portable devices can cross the border between formal and informal learning. Collis and Moonen (2001) highlighted the importance of developing adequate curriculum for mobile learning of

a foreign language. Cavus and Ibrahim (2009) named this kind of learning "m-learning". Klopfer and Squire (2008) listed several positive features of mobile devices: their connectivity, interactivity, individuality, and portability. Kadyte (2003) introduced a mobile application that can help students learn Finnish, whereas Huang, Jeng and Huang (2009) thinks that mobile devices can support collaborative learning.

Liu, Wang, Liang, Chan, and Yang (2003) suggest teaching by using wireless and mobile technologies following these steps: class preparation, introducing guidelines, designing the topic and planning projects, implementing group projects, presentation and evaluation, revising, sharing, and grading. According to these authors, each student has to have an e-learning portfolio, and this kind of portfolio facilitates their follow-up process (Liu et al., 2003).

Therefore, it is important to examine teachers' and students' opinions on mobile/digital learning. However, there are only a few studies on this topic, especially when we consider English as a Foreign/Second Language (EFL/ESL) learning. In spite of this, we are going to provide relevant findings of studies that encompassed this contemporary topic in educational science.

Thornton and Houser (2005) found that Japanese students liked mobile learning more than learning from

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digital materials on a computer. Furthermore, they wanted to learn their English vocabulary lessons on their mobile devices, rather than receiving them by e-mail on their PCs. Hence, they thought that mobile learning was a highly effective process that produced more interaction with learning materials, compared to traditional ways of doing homework, studying course materials, etc. Similar results were obtained by Saran, Cagiltay, and Seferoglu (2008) as well as Nah, White, and Sussex (2008): students really liked learning on their mobile devices, because they think that this process is interactive and interesting. Yang (2012) discovered that among students who learn English on their mobile devices, levels of motivation and attitudes towards learning were enhanced. Mobile assisted language learning (MALL) is somehow different from computer assisted language learning (CALL), because the first one allows students to learn more spontaneously (Kukulska-Hulme & Shield, 2008).

Cheng, Hwang, Wu, Shadiev, and Xie (2010) examined the effects of a special system designed to learn English on campus at their university. Their results revealed positive learning outcomes for such a system, where this approach to learning English was considered an enjoyable and effective method.

Seppala and Alamaki (2003) investigated the role of mobile devices in teacher training. Their results suggest that supervising teachers and trainees felt comfortable while using mobile devices for educational activities. Their answers were classified into the following three categories: "convenience", "immediacy", and "expediency". Mobile devices facilitated the process of learning, saved teachers' time, reduced their problems with interchange of learning materials, and provided them with a casual and supportive learning atmosphere.

The aim and hypotheses of the present study

The main aim of our study was to examine teachers' attitudes toward the usage of electronic devices in classroom learning activities. More precisely, we wanted to investigate how teachers apply these devices in the educational process, how frequently, in which form, and what are their opinions about using these devices in the future? Based on this, we defined the following hypotheses:

1. Teachers' opinions are divided with regard to the usage of mobile devices and e-books (or other electronic learning materials).
2. Teachers think that mobile devices could improve their teaching process. (In other words, they want to use this kind of devices in the future.)
3. Attitudes toward mobile devices and digital materials are mutually correlated.

Methodology

We used the survey method in order to examine participants' attitudes toward mobile devices. For this purpose, we made a list of representative questions (items), which comprehended participants' ownership, attitudes, and habits related to the mobile devices.

Participants

The sample consisted of 159 teachers from public and private schools as well as public and private universities in Turkey. We applied one of the non-probabilistic sampling methods (more precisely, the convenience sampling).

Most of our participants have a Master's Degree ($n = 67$, or 42.1% of the total sample), then a degree-level teaching qualification ($n = 50$ or 31.4% of the sample). The least number of participants have a PhD ($n = 8$, i.e. 5% of all participants), post-graduate level teaching qualification ($n = 8$), or other qualification ($n = 8$). Nine of them (5.7%) have teaching certificates and there is the same number of teachers who have teaching diplomas. Teachers' experience in English language was divided into four categories: 0 – 3 years, 3 – 5 years, 5 – 10 years, and 10 years and more. There are 11 teachers (6.9%) who have three years of experience or less, 31 of them (19.5% of the sample) have 3 – 5 years of English teaching experience, 33 teachers (20.8%) have been involved in English teaching for 10 years or more and most of them have 5 – 10 years of experience ($n = 84$ or 52.8% of the sample). We have also asked our participants where they teach. Most of our respondents teach at private universities ($n = 63$ or 39.6% of total sample), then at state schools ($n = 38$, i.e. 23.9%). 25 participants (15.7%) teach at state universities and 16 of them (10.1%) at private schools. 7 teachers (4.4%) are at private language schools and 5 respondents (3.1%) are at other educational institutions. Finally, five teachers haven't provided information about their teaching places. We also asked our participants (teachers) if their students have mobile devices. 119 teachers (or 74.8% of total number of participants) from our sample said that most students have mobile device(s). 22 of them (i.e. 13.8%) have reported that some students have such devices. 14 (i.e. 8.8% of all participants) teachers said that very few students have mobile device(s). Only four teachers (2.5%) reported that none of their students had mobile device(s).

Instruments

For the purpose of this study, we designed a survey form with a list of questions on mobile devices and its usage in the EFL (especially ESL) classroom. This survey form is made in the following steps: identifying the indicators of participants' attitudes, habits, and ownership with regard to the mobile devices; making questions in order to put them into an appropriate

form for participants; listing the answering options; writing directions on how to answer these questions; and putting this list into digital/electronic form.

The main questions are: "Which mobile devices do you have?"; "Are you planning to buy any of mobile devices over the next year or two?"; "Do you ever use a mobile device as a teaching tool with students?"; "Would you use free mobile content for your own teacher development?"; "Would you use free mobile content for your own teacher development?"; "Would you pay a reasonable price for good quality content to develop your teaching?"; "Do you use e-books while teaching students?"; "Could you rate the importance of each of the following seven obstacles of using mobile devices in the teaching process?" (lack of training, students' attitudes, lack of connectivity, devices too varied, lack of devices, school administration, and pedagogical justification); "Do you think mobile learning will play an important role in the future of English language learning?"; "Do you think teachers should be responsible for helping students use mobile devices as a tool for learning?"; "Would you like your students to have and be able to use mobile devices in class?"; and "Would you prefer your students to have digital textbooks?"

Because we separately conducted data analysis for each question and our instrument is not a typical psychological scale (that measures only one hypothetical construct), we did not examine the reliability and validity of our instrument. In addition, answering options were not the same for every question/item, hence, they are analyzed one by one.

Research procedure and data processing

The data were collected at the beginning of 2015. It took teachers approximately 10 minutes to fill out the survey form. We took into account the ethical standards of educational sciences and told participants that they will remain anonymous as well as their data will be used only for scientific purposes. Our respondents voluntarily participated in this research. Next, the answers were coded and entered into SPSS (Statistical Package for the Social Sciences), in order to create a database. After this, we used both descriptive and inferential statistical procedures to display and analyze the collected data. We used a chi-squared test to examine differences in frequencies of participants who answered some questions with "yes" or "no." In addition, we used Spearman's coefficient of rank-correlation (r_s) to test if the relationships among teachers' attitudes are statistically significant.

Results

First, we are going to show some descriptive statistical values (frequencies and rankings). We have asked teachers which devices they own. Their answers were

ranked by number of teachers who own a particular category of devices (Table 1).

Table 1. Teachers' ownership of devices

Rank	Device	Frequencies
1	Android phone	110
2	Internet capable phone	53
3	Android tablet	30
4	Other tablet type device	20
5	iPhone	15
6	iPad	14
7	iPod Touch	12
8	Don't own any device(s)	8

A device which is owned by most teachers (Table 1) is an Android phone ($n = 110$), then an Internet capable phone ($n = 53$), and an Android tablet ($n = 30$). The least number of teachers own an iPad (14 of them) and an iPod touch (12 of them). Eight teachers do not own any device.

We also asked our participants if they plan to buy any devices which we have listed in our survey. This information is not directly related to the aim of the research; however, it allows us to describe the background of our research, putting it into the appropriate framework. The results are shown in Table 2.

Table 2. Teachers' plans of buying devices over the next year or two

Rank	Device	f
1	Not planning to buy any	59
2	iPad	48
3	Ebook reader (Kindle etc.)	44
4	iPhone	16
5	Android tablet	12
6	iPod Touch	10
7	Android phone	10
8	Other type of Internet capable phone	6
9	Other type of tablet device	0

From Table 2, we can see that most of our participants do not plan to buy any device(s) over the next year or two ($n = 59$). Forty-eight of them are planning to buy an iPad and 44 of them to buy an e-book reader. Only six teachers are planning to buy other types of Internet-capable phones and no one is planning to buy any other type of tablet device.

Table 3. Results of chi-squared test for the question: "Do you ever use a mobile device as a teaching tool with students?"

Answers	Frequencies		χ^2	df	p
	Observed	Expected			
Yes	84	79.5	.509	1	.475
No	75	79.5			

As we can see from Table 3, there is no statistically significant difference between the number of teachers who use mobile devices as teaching tools and those who do not ($\chi^2(1) = .509, p > .05$). Besides, 84 participants answered this question positively whereas 75 teachers answered negatively. Therefore, there is almost equal number of those who use mobile devices as teaching tools with students and those who do not use this kind of devices for teaching purposes.

Table 4. Chi-squared test for using free mobile learning content with students

Answers	Frequencies		χ^2	df	p
	Observed	Expected			
Yes	109	78.0	24.64	1	.000
No	47	78.0	1		

Table 4 shows that there is a statistically significant difference between the number of teachers who use ($n = 109$) and who do not use ($n = 47$) free mobile learning content with students ($\chi^2(1) = 24.641, p < .001$). Therefore, there is the significantly higher number of teachers who use free mobile learning content with students.

Table 5. Results of chi-squared test for the question: "Would you use free mobile content for your own teacher development?"

Answers	Frequencies		χ^2	df	p
	Observed	Expected			
Yes	132	79.5	69.34	1	.000
No	27	79.5	0		

Based on the data in Table 5, we can conclude that there are more teachers who would use free mobile content for their own professional development ($n = 132$), than those who would not ($n = 27$). This finding is statistically significant ($\chi^2(1) = 69.340, p < .001$). In other words, there are significantly more teachers who would use free mobile content for their own professional development.

Table 6. Chi-squared test for the attitudes towards paying a reasonable price for good quality teaching/learning content

Answers	Frequencies		χ^2	df	p
	Observed	Expected			
Yes	123	79.5	47.604	1	.000
No	36	79.5			

Table 6 displays statistical evidence that there is a statistically significant higher number of teachers who would pay a reasonable price for good quality teaching/learning content ($n = 123$), than of those who would not ($n = 36$) pay for it ($\chi^2(1) = 47.604, p < .001$). Therefore, lots of teachers reported that they are eager to pay reasonable price for good quality teaching or learning content.

Table 7. Results of chi-squared test for the question: "Would you pay a reasonable price for good quality content to develop your teaching?"

Answers	Frequencies		χ^2	df	p
	Observed	Expected			
Yes	127	79.5	56.76	1	.000
No	32	79.5	1		

From the data in Table 7, we can conclude that there are more teachers who would pay a reasonable price for good quality content to develop their teaching ($n = 127$), than those who would not ($n = 32$). This difference/result is statistically significant ($\chi^2(1) = 56.761, p < .001$) and is similar to that showed in the Table 6. Hence, lots of teachers reported that they would pay a reasonable price for good quality content (that can help them to develop their teaching).

Table 8. Chi-squared test for using e-books with students

Answers	Frequencies		χ^2	df	p
	Observed	Expected			
Yes	75	78.0	.231	1	.631
No	81	78.0			

Referring to Table 8, there is no statistical difference between the number of teachers who use e-books with students and the number of those who do not ($\chi^2(1) = .231, p > .05$). Therefore, the information about the number of those who use and who do not use e-books with students does not allow us to conclude that there is the larger number of teachers who do not use them with students ($n = 81$), compared to the number of those who do so ($n = 75$).

We were also interested in main obstacles to the use of mobile learning in the teaching process. In our survey, we listed the following obstacles: lack of training, lack of connectivity, lack of devices, devices too varied, school administration, students' attitudes, and pedagogical justification. We have calculated minimum (*Min*) and maximum (*Max*) values for five-point Likert scales, which were added to evaluate these seven obstacles. We also calculated arithmetic means (*M*) and standard deviations (*SD*). These obstacles have been ranked by their arithmetic means and displayed in Table 9.

Table 9. Seven obstacles of using mobile devices in teaching process, ranked, and with their descriptive values

Rank	Obstacle	Min	Max	M	SD
1	Lack of training	1	5	3.40	1.41
2	Students' attitudes	1	5	3.35	1.24
3	Lack of connectivity	1	5	3.08	1.23
4	Devices too varied	1	5	2.98	1.13
5	Lack of devices	1	5	2.98	1.22
6	School administration	1	5	2.94	1.12
7	Pedagogical justification	1	5	2.89	1.02

The first ranked obstacle (Table 7) was lack of training ($M = 3.40$), then students' attitudes ($M = 3.35$), and lack of connectivity ($M = 3.08$). The fact that devices are too varied ($M = 2.98$) or that there is lack of devices ($M = 2.98$) are moderate obstacles to the using of mobile learning in teaching processes. School administration ($M = 2.94$) and pedagogical justification ($M = 2.89$) are the least important categories of obstacles.

Next, we examined correlations between teachers' attitudes about using mobile devices in the educational process. Specifically, we asked teachers for answers to the following four questions:

A - "Do you think mobile learning will play an important role in the future of English language learning?"

B - "Do you think teachers should be responsible for helping students use mobile devices as a tool for learning?"

C - "Would you like your students to have and be able to use mobile devices in class?"

D - "Would you prefer your students to have digital textbooks?"

Because answer options were presented in the form of an ordinal scale, we have calculated a non-parametric measure of correlation – Spearman's rho coefficient (Table 10).

Table 10. Correlations between teachers' attitudes towards learning by mobile devices

	A	B	C	D
A	1	.225*	.388*	.031
B		1	.443*	.308*
C			1	.418*
D				1

* Correlation coefficients are significant at level .01

From Table 10, we can say that teachers who think that mobile learning will play important role in future English learning also think that they have a responsibility for helping students use devices ($r_s(157) = .225, p < .01$). This correlation is low and positive. They also like that their students are able and have available to use mobile devices in class ($r_s(157) = .388, p < .01$). This coefficient of correlation is also positive and its value is of low to medium magnitude. The correlation between their attitudes about mobile learning of English in the future and their preference for having digital textbooks for students is not statistically significant ($r_s(157) = .031, p > .05$). Hence, it is very low, and its value is near zero.

Teachers who think that they are responsible for students using devices also like that students are able and have available to use mobile devices in class ($r_s(157) = .443, p < .01$). This correlation is, though, positive and moderate. Furthermore, answers to the question labeled as "B" (Table 10) are correlated as statistically significant with a preference for having digital textbooks by students ($r_s(157) = .308, p < .01$). This coefficient of correlation is positive and of low to medium magnitude.

Finally, teachers who like that students are able and have available to use mobile devices in class prefer that students have digital textbooks ($r_s(157) = .418, p < .01$). Therefore, this correlation is positive and moderate.

Discussion

Our results suggest that most of the teachers in our sample have an Android phone ($n = 110$). However, lots of them ($n = 59$) are not planning to buy any of the mobile devices over the next year or two years. Those who plan to buy a new mobile device reported that they are going to buy an iPad.

Out of 159 teachers, 84 use mobile devices as a teaching tool, but 75 do not use them while teaching students. On the other side, lots of them ($n = 109$) use free mobile learning content with students, while 132 of them use such content in their own teaching development. 123 teachers claim that they will pay a reasonable price for good quality teaching/learning content. Hence, they have a positive attitude toward the use of portable/mobile devices for their own professional development and activities, which is in accordance with findings from the already mentioned study conducted by Seppala and Alamaki (2003).

Next, more than half the teachers ($n = 81$) use e-books with their students. Teachers think that the two main obstacles to using mobile devices in teaching are lack of training and students' attitudes. Contrarily, they think that school administration and pedagogical justifications can be considered as two very small obstacles.

Finally, almost all the teachers' attitudes were mutually correlated. In other words, they were in statistically significant correlation to each other. The highest coefficient of correlation was calculated between teachers' attitudes toward their responsibility for helping students use mobile devices as an educational tool and their attitude toward allowing students to have and to be able to use mobile devices in class. The non-significant coefficient of correlation was that of teachers' attitudes toward the role of mobile devices in the future and their attitudes toward using mobile devices in class by students.

Hence, teachers expressed positive attitudes toward the application of mobile devices in the educational context. Their attitudes are similar to those of students, as was found in lots of previous studies (e.g. Liu et al., 2003; Huang, Lin, & Chuang, 2007; Nah, White, & Sussex, 2008; Cheng et al., 2010).

The most important contribution of the present study is its attempt to collect and examine teachers' attitudes and professional habits with regard to the use of mobile devices by students as well as themselves. On the other hand, its main shortcoming is the lack of student samples, because we did not compare students' and teachers' answers on the same set of questions. By doing that, we could have examined whether there are significant differences in their attitudes.

Therefore, the recommendation for further studies on this topic is to examine these differences and similarities. Future studies can also examine teachers' digital literacy; the combination of using traditional and mobile devices while teaching; educational outcomes of using such devices (e.g. students' marks on midterm and final exams); possible threats of using mobile devices (e.g. not listening to the teacher, using other mobile applications for fun, etc.); parents' attitudes toward using mobile devices by their children during school classes...

Some feasible/practical implications are the following: school management should supply teachers with mobile devices that are going to be used in teaching process; teachers should allow their students to use their mobile devices during school classes (but only for educational purposes); teachers have to talk to students about their attitudes towards using mobile devices; students should ask their teachers for help while using e.g. learning materials and data on the Internet (some of those data are not totally correct and teachers can decide whether they are suitable for students or not).

Conclusion

Taking into account our hypotheses, we can draw the following conclusions:

1. Approximately half of the teachers usually use mobile devices and e-learning materials while teaching; however, another half do not use devices in their EFL (more precisely: ESL) classroom.
2. Teachers think mobile devices could improve their teaching activities and believe that they are useful in the English language learning process.
3. Most of the attitudes toward mobile devices and digital materials are mutually correlated, except for a pair of attitudes on teachers' responsibility for students' proper usage of mobile devices in class.

Accordingly, some teachers use digital content in order to improve their teaching process. Probably some of them do not know how to use this kind of materials or are too old to use them quickly and effectively. Besides, on the average, their attitudes towards them are very positive which indicates high motivation levels for using this kind of devices. Motivation is the first step in changing their approach to teaching. In other words, contemporary teaching is possible, despite the fact that some teachers are too old or too conservative.

Next, we found that lots of attitudes toward educational usefulness of mobile devices are correlated to each other. Therefore, the positive change in some attitudes will lead to the expected change in other attitudes. These results have huge practical consequences to modern educational context.

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